REMARKS

By the foregoing Amendment, Claims 1 and 15 are amended. Entry of the Amendment, and favorable consideration thereof is earnestly requested.

Claims 1-33 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-20 of copending Application No. 10/673,782 filed September 29, 2003. Enclosed herewith is a Terminal Disclaimer obviating this rejection.

The Examiner has rejected Claims 1-33 under 35 U.S.C. §102(e) as being anticipated by Heckmann et al. (U.S. Patent No. 6,525,432). Applicant respectfully asks the Examiner to reconsider this rejection in view of the above Amendments and the below Remarks.

The present invention is directed to a power supply for a braking system which is particularly adapted to provide system redundancy, while at the same time reducing the likelihood of complete system failure in the case of catastrophic failure (such as caused by an exploding tire, a fire or the like) of one of the system components being powered. This has been a problem with known prior art systems, which generally operate in one of two ways.

In the first type of known prior art system, multiple power supplies are provided, each of which powers some of the brake system components, but not others. Thus, for example, a system may include two power supplies, each powering half of the brake system components. Thus, in the case of failure of one power supply, half of the system components would still be receiving power.

In the second type of known prior art system, multiple power supplies are provided, each of which provides power to all system components on a full time basis (i.e., true redundancy). While this may appear desirable in that should one of the power supplies fail, all of the system components would be receiving power from the other power supply, in practice, this type of system suffers from at least one significant drawback. Specifically, in the event of a catastrophic failure in one of the system components powered by both power supplies (such as caused by an exploding tire, a fire or the like), both power supply networks may be shorted out, thus causing both power supply networks to fail resulting in a complete loss of power to all system components.

The present invention remedies the deficiencies of both types of prior art systems. In the present invention, first and second power supply networks electrically connect one or more power supplies with first and second brake components, respectively. An auxiliary power supply link is activatable to

electrically connect the first brake component and the second brake component only when a failure occurs in one of the first power supply network or the second power supply network, the auxiliary power supply link being adapted to transmit the electrical power between the first brake component and the second brake component when the failure occurs. Such an arrangement provides redundancy in that should the first power supply fail, the first brake component would be provided power through the auxiliary power supply link from the second brake component. Moreover, the system is not prone to complete failure, in that should the first brake component suffer from a catastrophic failure, the first power supply network may be shorted out -- the second power supply network being safe since the first brake component was not directly connected to the second power supply network when it suffered catastrophic failure. Thus, other brake components which have been supplied power by the first power supply network (now shorted out) may be supplied power by the other half of the "pair" to which they belong through auxiliary power supply links, thereby rendering only a single brake component (i.e., the one which suffered from a catastrophic failure anyway) without power.

Claims 1 and 15, the two independent apparatus claims, have been amended to further highlight the novelty of the present invention, and require, among other elements, (i) an auxiliary power supply link between a pair of brake

components, which link is (ii) activatable to electrically connect the pair of brake components only when a failure occurs in one of the power supply networks.

Applicant respectfully submits that Heckmann et al. does not disclose, teach or suggest either of the above-highlighted elements. In fact, Heckmann et al. is merely a combination of the two above-described prior art power supply redundancy techniques.

Some of the brake components of Heckmann et al. employ the first technique, where two power supplies are provided, each powering half of certain types of brake system components. For example, the bus drivers for one channel are powered by one power source, and the bus drivers for the other channel are powered by a second power source. Heckmann et al. specifically states that:

> According to an exemplary embodiment of the present invention, redundancy is provided with respect to the power supply, with all of the bus drivers of a first channel having a supply voltage VCC1 being supplied from the first power source E1 and all bus drivers of the second channel having supply voltage VCC2 being supplied from the power source E2.

Column 3, lines 57-63. Heckmann et al. also states that:

> Accordingly, the elements in FIG. 1 that are supplied from power source E2 are indicated with dotted lines, and the elements supplied by power source E1 are indicated by solid lines. The result is that the driver microchip of one of the two buses (and therefore the corresponding transmission channel) is supplied with voltage by the first power source E1, and the driver microchip of the other one is supplied with voltage by the other power source E2.

Column 4, lines 50-58.

Others of the brake components of Heckmann et al. employ the second technique, where multiple power supplies provide power to certain system components on a full time basis. For example, portions of the microcomputers are powered by two power supplies simultaneously. Heckmann et al. specifically states that: "For assuring the operating safety of the control system even in the event of the failure of one of the power sources, at least the interface microchips ensuring the communication of the individual units via communications system 24 are supplied by both power sources E1 and E2." (Column 3, lines 43-49).

While Heckmann et al. does employ "electrical separating elements" in an attempt to avoid electrical coupling of the two power sources, such elements would do nothing in the event that one of the system components simultaneously receiving power from both power supplies suffered from catastrophic failure. Both power supply networks would still risk being shorted out.

In view of the above, Applicant respectfully submits that there is no disclosure, teaching or suggestion in Heckmann et al. of all elements of Claims 1 and 15, as amended. With respect to the only other independent claim, Claim 27, this method Claim even more specifically requires the particulars of how a determination is made as to whether a failure exists, and if so, whether or not to

activate the auxiliary power supply link to electrically connect the first brake component and the second brake component. As such, Applicant respectfully submits that the subject matter of Claim 27 is clearly not disclosed, taught or suggested by Heckmann et al.

For the foregoing reasons, Applicant respectfully submits that all pending claims, namely Claims 1-33, are patentable over the references of record, and earnestly solicits allowance of the same.

Respectfully submitted,

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Amendments to the Drawings:

No amendments are made to the Drawings herein.